

WHAT IS CLAIMED IS:

1. Laser apparatus for generating laser light to be transmitted through an optical
2 transmission system, comprising:
3 a laser that emits light that is substantially linearly polarized; and
4 a quarter wave retarder plate, disposed with respect to the laser so that the emitted
5 laser light passes through the quarter wave retarder plate prior to transmission of the emitted
6 laser light through the optical transmission system, the quarter wave retarder plate causing the
7 emitted laser light to become circularly polarized with a predefined handedness;
8 wherein the quarter wave retarder plate is also disposed so that light reflected by the
9 optical transmission system back toward the laser passes through the quarter wave retarder
10 plate prior to reaching the laser, the quarter wave retarder plate causing the reflected light to
11 become linearly polarized with a polarization that is orthogonal to the emitted laser light
12 emitted by the laser.

1. 2. The laser apparatus of claim 1, further including a lens disposed between the laser and
2 the optical transmission system, wherein the quarter wave retarder plate is disposed between
3 the laser and the lens.

1. 3. The laser apparatus of claim 2, further including a linear polarizer disposed between
2 the laser and the quarter wave retarder plate.

1. 4. The laser apparatus of claim 3, wherein the linear polarizer is adjacent a surface of the
2 quarter wave retarder plate that faces the laser.

1. 5. The laser apparatus of claim 1, further including a linear polarizer disposed between
2 the laser and the quarter wave retarder plate.

1. 6. The laser apparatus of claim 5, wherein the linear polarizer is adjacent a surface of the
2 quarter wave retarder plate that faces the laser.

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1 7. The laser apparatus of claim 1, including a hermetically sealed housing in which the
2 laser is mounted, the housing having a window through which the emitted laser light is
3 transmitted;
4 wherein the quarter wave retarder plate is disposed to form part of the housing.

1 8. The laser apparatus of claim 7, further including a linear polarizer disposed between
2 the laser and the quarter wave retarder plate.

1 9. The laser apparatus of claim 8, wherein the linear polarizer is adjacent a surface of the
2 quarter wave retarder plate that faces the laser.

1 10. The laser apparatus of claim 9, further including a lens disposed between the laser and
2 the optical transmission system, wherein the quarter wave retarder plate is disposed between
3 the laser and the lens.

1 11. The laser apparatus of claim 1, including a hermetically sealed housing in which the
2 laser is mounted, wherein the quarter wave retarder plate is disposed to form a window of the
3 housing through which the emitted laser light is transmitted.

1 12. The laser apparatus of claim 11, further including a linear polarizer disposed between
2 the laser and the quarter wave retarder plate.

1 13. The laser apparatus of claim 12, wherein the linear polarizer is adjacent a surface of
2 the quarter wave retarder plate that faces the laser.

1 14. The laser apparatus of claim 1, further including a lens disposed between the laser and
2 the optical transmission system, wherein the quarter wave retarder plate is disposed between
3 the lens and the optical transmission system.

1 15. Laser apparatus for generating laser light to be transmitted through an optical
2 transmission system, comprising:
3 a laser that emits light that is substantially linearly polarized;

4 a hermetically sealed housing in which the laser is mounted, the housing having a
5 window through which the emitted laser light is transmitted; and
6 a quarter wave retarder plate, disposed with respect to the laser so that the emitted
7 laser light passes through the quarter wave retarder plate prior to transmission of the emitted
8 laser light through the optical transmission system, the quarter wave retarder plate causing the
9 emitted laser light to become circularly polarized with a predefined handedness;
10 wherein the quarter wave retarder plate is also disposed so that light reflected by the
11 optical transmission system back toward the laser passes through the quarter wave retarder
12 plate prior to reaching the laser, the quarter wave retarder plate causing the reflected light to
13 become linearly polarized with a polarization that is orthogonal to the emitted laser light
14 emitted by the laser.

1 16. The laser apparatus of claim 15, further including a lens disposed between the laser
2 housing and the optical transmission system, wherein the quarter wave retarder plate is
3 disposed between the housing and the lens.

1 17. The laser apparatus of claim 16, further including a linear polarizer disposed between
2 the quarter wave retarder plate and the housing.

1 18. The laser apparatus of claim 17, wherein the linear polarizer is adjacent a surface of
2 the quarter wave retarder plate that faces the laser.

1 19. The laser apparatus of claim 15, further including a linear polarizer disposed between
2 the quarter wave retarder plate and the housing.

1 20. The laser apparatus of claim 19, wherein the linear polarizer is adjacent a surface of
2 the quarter wave retarder plate that faces the laser.

1 21. The laser apparatus of claim 15, wherein the quarter wave retarder plate is disposed to
2 form part of the housing.

1 22. The laser apparatus of claim 21, further including a linear polarizer disposed between
2 the quarter wave retarder plate and the laser.

1 23. The laser apparatus of claim 15, further including a lens disposed between the laser
2 housing and the optical transmission system, wherein the quarter wave retarder plate is
3 disposed between the lens and the optical transmission system.